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Attracting New Industry

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# Attracting new industry

**How to analyze your town's industrial potential**

Historic Document

# **Attracting new industry**

**How to analyze your town's  
industrial potential**

by H. A. Wadsworth  
Professor of agricultural economics  
Purdue University



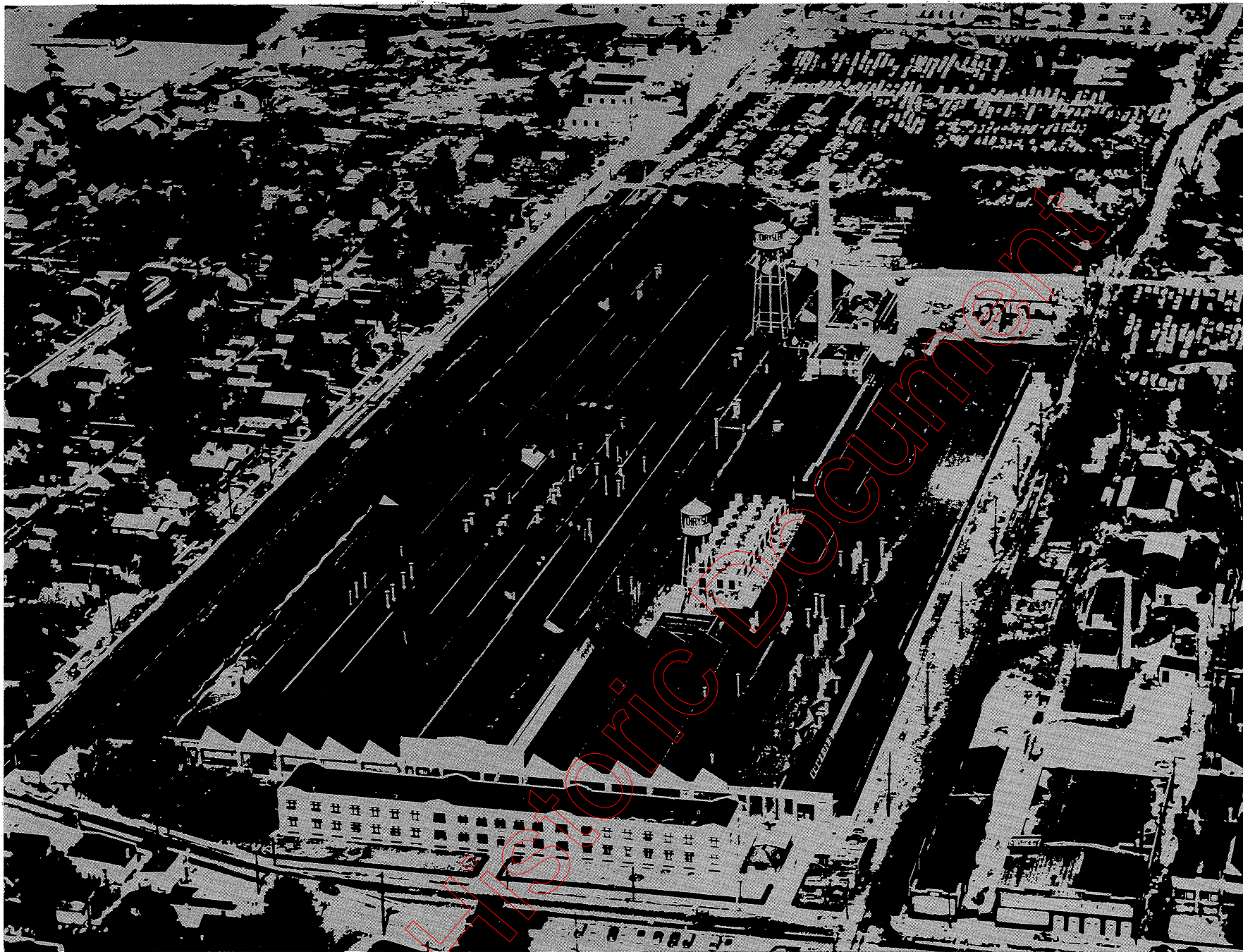
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# Introduction





## Introduction

During the past decade, the United States has experienced an accelerated rate of "community fallout," the process which results from an area's inability to stay with or return to the mainstream of social and economic development.

"If the measure of a community's potential is its capacity to provide an adequate range of social, economic and cultural services, it is obvious that many American communities are outside the mainstream," observed the report of the Joint U.S. Department of Agriculture—National Association of State Universities and Land-Grant Colleges Study Committee.<sup>1</sup> The 1966 study emphasized that, "Communities that have not provided satisfactory jobs, recreation and cultural opportunities and other social and economic needs for their residents have declined."<sup>2</sup>

The Joint Study Committee recommended a three-fold increase in manpower to expand programs for education in community resource development.

Today, the community development program, whether

in large or small communities, seeks to improve per capita incomes and corresponding standards of living.

To achieve these goals, it is necessary either to expand the employment capacities of existing local businesses, or to attract new industry into the area. Often, such growth is also necessary to compensate for losses of income caused by changes in technology and consumer demands. More than one community has declined because its own primary resource became outdated, and it had no ready replacement.

Smaller communities are also being affected by today's migration patterns as their younger and better educated residents, most often those with little fixed investment and weak social ties in the community, move to the cities for higher paying jobs which promise faster advancement. This movement is a drain on one of the community's primary resources and retards its future economic and social development.

Alternatives to leaving home are, of course, to commute daily or to help create new and better job opportunities in the local community. Economists see the latter course as more advantageous because the results accrue in the community; sociologists prefer it because it does not further increase the population pressures of urban areas.

<sup>1</sup> footnote, "A People and A Spirit," A Report of the Joint United States Department of Agriculture and the National Association of State Universities and Land-Grant Colleges Extension Study Committee, Colorado State University, Fort Collins, November 1968.

<sup>2</sup> Ibid.



Political concern for the situation was expressed by the introduction of the Rural Job Development Act of 1967, in an endeavor to promote better use of the natural resources of rural America, to slow migration caused by a lack of economic opportunity, and to reduce the population pressures in urban areas.<sup>1</sup> Testimony in the Senate placed as much emphasis on the latter goal as on the preceding objectives.<sup>2</sup>

In the long run, however, it will be the ambitions and energies of residents in the local communities that set the course of development for their areas. Those who seek improved incomes and higher standards of living can take active steps toward those goals. One of the first considerations should be a determination of the way industry looks at a community and the criteria that receive close attention.

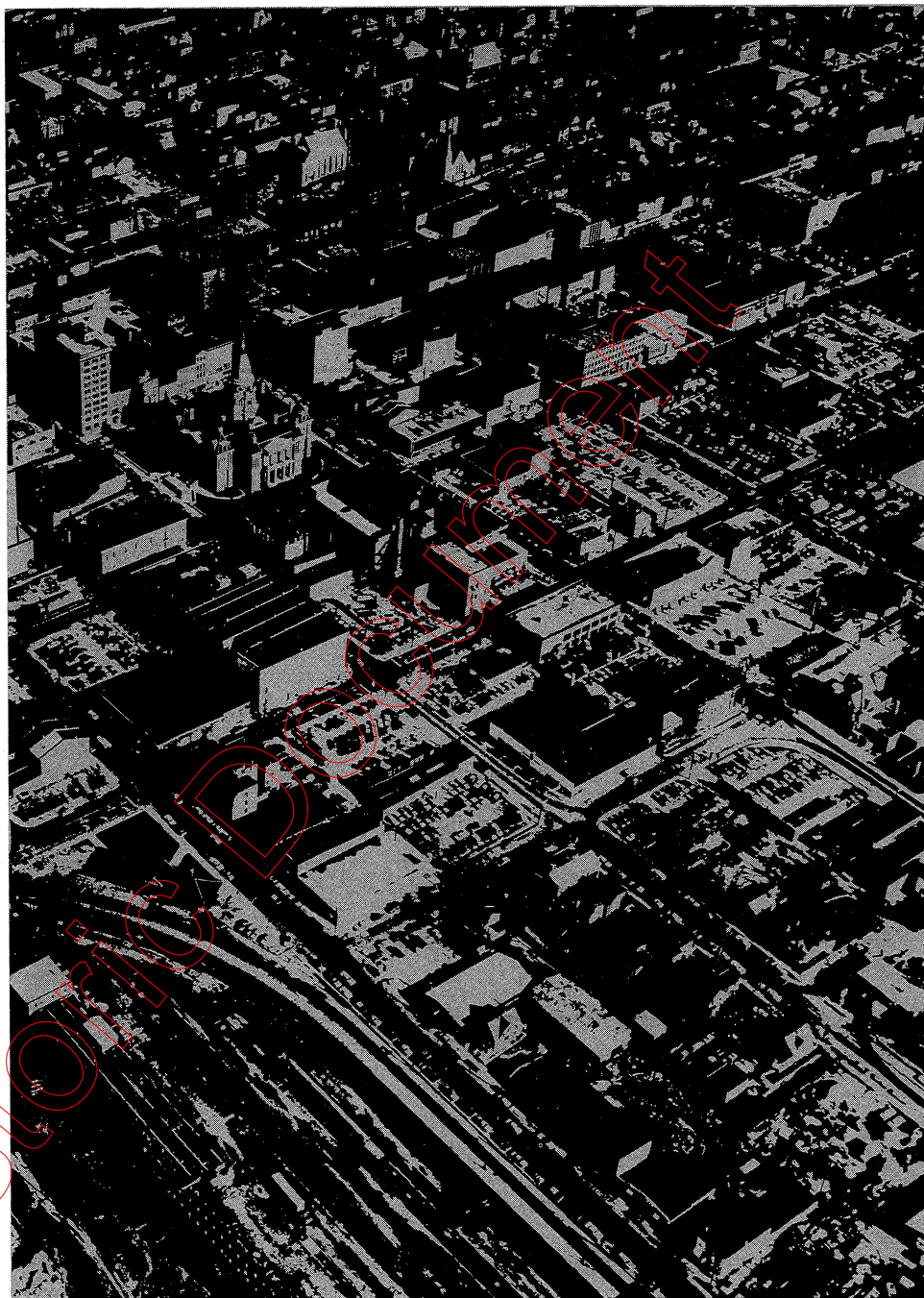
There are three viewpoints that directly influence industrial location decisions:

- Private industry, as the major source of capital, is concerned with profit potential and the influence of the community on profit;
- The community is concerned with the criteria that industry will use and what can be done to influence the decision;
- Residents of the community are concerned with improvement of their living and working environments.

This publication strives to assist community and resource development leaders with an identification of the important economic and intangible criteria that go into the location decisions, and an examination of the conflicts between those criteria in Chapters 2 and 3. Chapter 4 analyzes an actual location decision. The author hopes this general guide will stimulate community leaders to think more critically about the social and economic development in their own locale.

<sup>1</sup> Senate Bill 2134, introduced by Senator James B. Pearson, Kansas on July 21, 1967, in the Senate of the United States, 1st Session, 90th Congress.

<sup>2</sup> Proceedings and Debate of the 90th Congress, First Session, pp. 19629-19637, July 21, 1967. U. S. Government Printing Office, Washington, D. C.

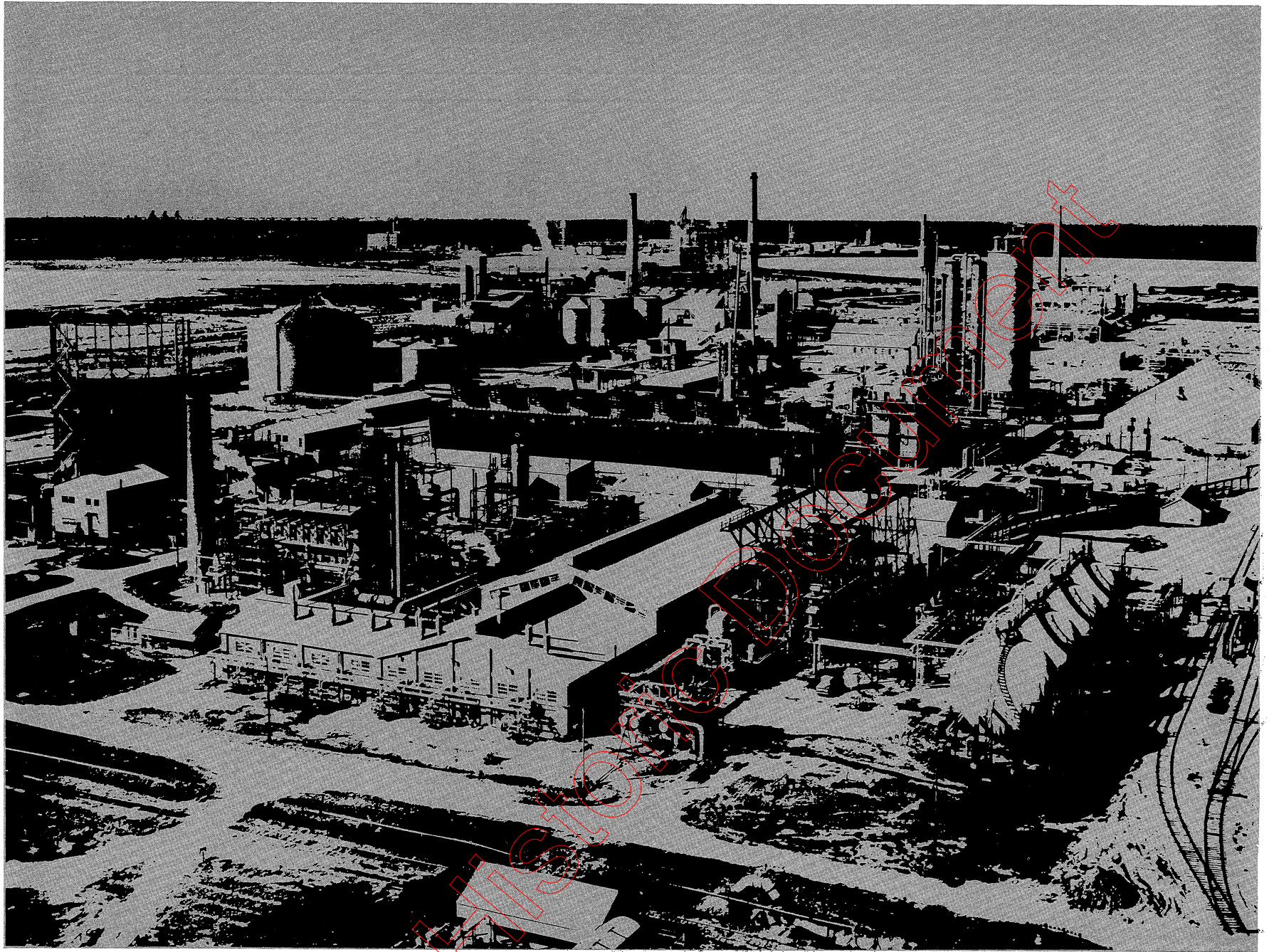




**Chapter 1**

**Influencing  
the location decision**







## Influencing the location decision

The major objective of all businesses must necessarily be profits, and it is the anticipation of profits that causes businesses to expand or to select new locations for additional plants.

There are three distinct phases in the process of corporate expansion into a new area. Initially, the firm decides to make the investment and chooses the target region, usually a wide area encompassing many communities, sometimes in more than one state.

Secondly, the firm separates the region's communities into two groups—those that satisfy the critical requirements and those that do not. Finally, the firm selects the specific community where it will locate personnel and resources, often at tremendous cost and increased risk to the capital assets.

Although a community cannot know of progress in the first phase, it can take steps to improve its chances of being considered in the latter two phases.

Phase one of the location-decision process is highlighted by the decision to expand and the selection of the general area for expansion.

The region is often selected to complement the firm's management strategy. The firm may want to penetrate a new market in a specific area where the plant is to be located, to develop new customers in an existing market area, or to better supply a growing market. It may see an opportunity to use new resources or transportation tech-

nology, to further distribute its facilities across the country, to more efficiently use the company-wide procurement channels, or to minimize transportation costs. During this phase, individual communities are not considered in the decision.

In phase two, the firm sorts communities on the basis of industry's critical requirements. In some cases, these criteria may be absolute quantities. In others, the criteria may be value judgments reflecting the preferences of management based on past experience.

There are many criteria that can be used in this screening process, and each firm establishes its own list. An analysis of the location decision of a firm screening Indiana communities indicated that the firm, a metal fabrication company, used nine criteria when narrowing the choice from 100 possibilities to eight contenders.<sup>1</sup>

The firm considered: (1) whether an interstate truck line served the community; (2) whether rail freight and one switching a day rail service were available; (3) the extent of telephone and telegraph services; (4) whether there was a place to dispose of refuse materials and sludge; (5) food catering or vending services; (6) a location site of at least 10 acres; (7) a city population over 500, a county population over 5,400; (8) water pressure

<sup>1</sup> Prewett, Raymond L., "The Analysis of an Industrial Location Decision," Unpublished M.S. thesis, Department of Agricultural Economics, Purdue University, Lafayette, Indiana, June, 1968.



greater than 40 pounds with main size greater than eight inches, water volume of 16,000 cu. ft. per day and sewage facilities to treat the effluent; and (9) natural gas availability of 5,600 cu. ft. per hour.

It is important to see that these factors indicate the general acceptability of some communities, but also eliminate many others. At this point in the decision-making process, there is nothing the community can do to influence the industry choice.

Phase three of the location decision represents an attempt by the firm to optimize the choice from among those communities that met the initial criteria. The firm now studies the economic conditions in detail, as well as the kinds and qualities of public and private services available in each community. To do this, the firm must develop a comparative framework for assessing the various communities.

Within the framework, the primary consideration will be the profit potential of each site. If the location does not affect the firm's pricing policies, then only those costs that vary from one location to another need be considered.

However, the firm will also consider the non-economic, or environmental characteristics of the community where its employees will work and live. Often, these intangible considerations have a greater influence on the location decision than a relatively small gain in net profits.

In this respect, communities can play an active role in phases two and three of the location decision. Interested, active groups can compile an inventory of the community's resources and evaluate its ability to meet the requirements of industry.

Armed with this inventory, they can work to stimulate public and private investment to improve existing conditions and thus enhance the chances of being selected.

When communities decide to pursue new industry, the leaders can focus attention on the area's features that would be of interest to industry. Several communities can work together on a regional basis to plan and conduct promotional activities and disseminate information about the people and resources of the area. Community leaders

can also work for favorable changes in legislation, transportation, communication, education and recreational opportunities.

Local efforts play an active role in developing the total private and public community services package. The active community examines its offering of education, recreation, cultural, medical and shopping opportunities in terms of its ability to fulfill the needs of the college-trained management and technical personnel. Because industry has difficulty attracting and keeping this group of employees, the competitive community should provide an environment attractive to them.

Critical examination of the community may result in efforts to broaden and improve those opportunities. Public action may be necessary to improve schools, parks, golf courses, swimming pools, street lighting, sanitation, education and public safety.

Private businesses may need to adjust lending policies of banks, provide trucking terminals, new and expanded restaurants, hotels, motels and medical facilities.

The community may also find it necessary to expand communication services, airport facilities, railroad capabilities and highway networks.

The passive community may promise action after the location decision; but this is a hazardous course, since industries examine the existing community package. Industry wants to see developments that reflect the desires of existing residents rather than a program implemented solely to attract new residents. Communities that choose to wait until after the phase three decision may never be considered.

However, industry's final decision must often be a compromise. Communities with attractive cost conditions are frequently bypassed because the intangible working and living conditions are relatively undesirable. Concerted community efforts to improve the environment would increase chances of industrialization.

On the other hand, those communities with less attractive cost conditions generally have desirable living and working conditions. In this case, industry must decide how much it is willing to pay for a more desirable environment.



**Chapter 2**  
**Price variables**





## Price variables

A detailed examination of a selected list of communities comprises the third stage of the decision. At this stage, input-output relationships of the production process are established. Usually, decisions have been made about product pricing policies, the number of workers and size of the plant, the number and kind of machines to be installed, and transportation and utility requirements. The variables are the prices of those inputs that must be purchased locally, since the cost of raw materials may vary directly with the availability of suppliers.

Even though the firm may be considering locations in two or more states, Federal policies and procedures will be the same. On the other hand, the state tax laws will certainly vary; and within a state, local taxation practices may vary among possible locations.

There are a number of costs that can differ from one community to another. The community that wants to actively court new industry should consider each economic factor as closely as the corporation's accountants. These factors include, among others, costs for labor, raw materials, transportation, utilities and taxes.

## Labor

Labor costs differ between communities, since local wage rates depend on competition for labor within the community. Low unemployment rates push wages higher than where substantial unemployment, or underemployment, exists. In those communities where a large portion of the resident labor force works outside the community,

local wage rates must be competitive with those paid elsewhere.

Estimating labor costs is difficult because of the lack of available information. Information can be obtained from a variety of sources, but will differ in reliability and scope. In some states data are available on labor costs by industry, as defined in the *Standard Industrial Classification Manual*.<sup>1</sup>

Such information will show the average wage for all workers in an industry without regard to the types of jobs in the firm. Clerical, production line, shipping, maintenance and supervisory wages are averaged. If the prospective firm has the same relative mix of jobs as do the firms included in the average, then it is reasonable to use the average wage rate figures. If, however, influences such as new technology have realigned the job mix, the average wage rate may be of little value.

Wage rates for skilled, semi-skilled and unskilled labor are also available from state sources, but will be more applicable to Standard Metropolitan Statistical Areas (SMSA) than to less urbanized areas.

Primary data on wage rates can be obtained by interviewing the management of firms in the community, or by examining union contracts that specify current wage information for particular jobs.

However, where commuting is common, local wage rates may not be the best indicator of the actual costs. In such cases, the competitive wage rate may actually be

<sup>1</sup> "Standard Industrial Classification Manual," Executive Office of the President, Bureau of the Budget, 1957.



the pay scale in an adjacent community, less the commuting costs.

Finally, a qualified judgment is often necessary to determine what will be needed to attract a sufficient quantity and quality of labor.

Labor costs are not relevant to such an analysis when firms operate under national labor union contracts. Such an arrangement fixes wages for all possible locations. It is also not usually necessary to include the wages of management personnel because their salaries are generally set by the home or divisional office at levels which do not vary with location.

### **Raw materials**

The production process requires a continuous flow of raw materials. Two costs are relevant to plant location—purchase price and transportation charges.

If there is only one possible supplier and only one price offered, then only the transportation charges to various locations need to be compared. However, if there are alternative suppliers, prices and transportation charges, the firm must compare the total costs of each item or input of comparable quality from each source.

### **Transportation costs**

The firm's analysis of transportation costs for raw materials requires a summary of the total costs of shipping from each supplier to the prospective plant location. Differences can be relatively large or small depending upon the dispersion of the communities under consideration, the number of alternative suppliers and the alternative means of transportation. Every possible combination must be considered.

If the raw material is relatively bulky, a combination of water, rail, and truck transportation may have to be examined. In some cases, air freight costs may need analysis. If there is only one barge line serving a port or a single railroad from that port to the site, then these are the only alternatives that can be considered. On the other hand, it might be possible to compare a water-rail combination with either a total rail haul, a water-truck haul, a rail-truck combination, or entirely by truck. Cost data must be obtained from each transportation firm since each may have differing rates based on available facilities and technologies.

### **Storage requirements**

Storage of raw materials is part and parcel of the cost analysis. The economies of large shipments often make it necessary to build or rent additional warehouse space to supplement that required for routine inventories. It is also possible that rerouting or using a new transportation service may reduce the warehouse requirements.

### **Product distribution**

To evaluate the impact of location on product distribution costs, the firm must know the approximate weight, volume and frequency of their shipments to major markets. Again, the company must examine costs for all possible transportation combinations to a number of destinations. The company may wish to compare costs of a common carrier with those of an internally owned and operated system.

Warehousing may also be a factor in distribution. If shipments are frequent but small, it may be in the firm's best interests to make larger shipments to an intermediate warehouse, and then distribute from there to the customer. The preferred distribution system will be the one that minimizes the total distribution costs of products to all customers and maintains the desired delivery schedule.

### **Electricity**

Electrical power rates are regulated by state Public Service Commissions. While rates generally evidence only slight variation within the state, the total cost of electricity to the firm can vary, depending on the nature of the service required and the policies of the company.

To estimate industrial power costs, information about kilowatt hour requirements, the power factor index, (indicating the steadiness of the electrical requirement) and the kilowatt hour demand factor are needed. These factors, when applied to the rates available from Public Service Commissions and most electrical utility companies, provide a basis for an approximate estimate.

Public Service Commissions, usually headquartered in state capitals, review, approve and record rates charged for each kind of service by each utility. They can also provide a detailed analysis of the types of services offered by the states' utility companies. General offices serving franchised areas can be located by the Public

Service Commissions or by reference to the *National Electric Rate Book* of the Federal Power Commission, Washington, D. C.

## Natural gas

Some firms may prefer natural gas to other energy sources for their production process, or for heating and cooling the plant and offices. Aggressive communities that seek industrial growth should have a dependable, adequate supply which can be extended to a specific plant site.

Two possible variables are of primary interest to industrial planners—variations in price and adequacy of the supply. Although the price per cubic foot may be subject to state regulations, variations in cost can result from pricing policies in specific areas, or from the actual amount of energy (BTUs) contained in each cubic foot of natural gas received at the plant site.

The firm will also be interested in the adequacy and dependability of the natural gas supply. Their requirements are determined by the needs of both the production process and the heating and cooling of plant and offices. The latter is a function of size and type of building construction and the average annual temperatures or degree-days of heat used in the past.

The state climatologist or the U.S. Weather Bureau can provide data on average and extreme temperatures, degree days and precipitation.

If natural gas is used only for heating and, therefore, is inconsequential in the warm months, the firm may not be able to take advantage of lowered rates based on additional volumes used. Interruptible service is occasionally available at reduced rates. If the interruption causes suspension of production, these rates may be costly to the firm in the long run.

When gas is the source of power for air conditioning, the cost should also be figured in the totals.

Possible alternatives to natural gas are electricity, fuel oil, propane gas and coal. However, such changes may require a redesigning of the plant which would affect the location decision when considering variable costs for natural gas versus other fuels. Those firms that have geared their production process to natural gas may be extremely reluctant to even consider an alternative source.

## Water

Water should also be included as a variable cost item. Normally, water consumption is directly related to the nature of the production process and to the number of employees. Since these two factors will be essentially the same at any site, the variations in cost of water will relate to the rate schedules of the utility companies. These rate schedules vary according to the number of taps, the size of lines and the required fire protection.

There are, however, additional considerations that may influence water costs.

Pressure may be a vital factor in the production process. If sufficient pressure is not available from the public utility, the firm can build a water tower to store large volumes and increase the pressure. It then becomes necessary to add the cost of building the tower and tank to the total cost of obtaining the water from public sources.

The firm may also need to finance the extension of pipelines to the industrial site. This may also influence the variable cost, since some rate schedules depend on delivery site.

If public water supply is not available, the firm would have to drill wells or build water impoundment sites. This influences construction costs, and adds maintenance costs for the firm.

Basic data about the quantity and quality of a community's water supply—volume, pressure, mineral content, temperature, acidity and hardness—can usually be obtained from the local utility. A more detailed analysis is normally available from the state board of health.

## Sewage

Sewage service is generally provided by municipal utilities. Sewage rates, which vary widely, are based on the volume of water used by the firm. It is not uncommon for a firm and the utility to negotiate the amount of water subject to treatment. This is justified on the basis that some production processes cause significant evaporation and the sewage charge should reflect only that portion of the water returned for treatment. Some communities will not consider this possibility, thus adding to the variation in sewage costs.

If the effluent discharge is compatible with treatment capabilities of the community, disposal through sanitary

sewers to the treatment plant is preferable. However, some contaminants—by-products of the company's manufacturing process—frequently require treatment exceeding the capabilities of the municipal system. If this is the case, private development and operation of treatment facilities may be necessary. The costs of construction and operation of private facilities in some communities must be compared with costs of using public treatment facilities in others.

Sewage lines are less likely to be available in areas outside incorporated communities. In some instances, public facilities are offered to a private firm on the condition that the firm will bear the cost of extending the utility pipeline. Therefore, the particular site within a community may also affect sewage treatment costs.

## **Taxes**

Variations in tax costs depend on the locations of competing communities. If sites in more than one state are being considered, then sales, real and personal property and gross income taxes must all be evaluated.

Within one state, the differences in tax expenses between communities will result from the financial needs and consequent levies of local government.

Further variations in tax costs may be the result of inconsistent assessment policies from one community to another.

Tax rates may also reflect differences in the quality and quantity of community services provided. While firms do seek to minimize their local tax liabilities, they also recognize that quality and variety of services is directly related to local government's income.

Local option sales taxes can be especially significant because they can help to reduce the property tax burdens to the advantage of the firm and its employees. Manufacturers may find the community with the local option sales tax more attractive than the community that relies primarily upon property taxes.

Firms also find it advisable to collect information about contemplated public expenditures. Since this usually increases tax rates, significant differences in rates can result between communities that have already developed their public facilities and those anticipating such development.

State tax data is available from the state taxing authority; local data from county and township offices.

The impact of taxes on the local variable cost structure can be important. However, the importance of these differences is largely reflected by the capital investment per worker. For companies with relatively low capital investments per employee, taxes are not likely to be so important in the location decisions as in those instances where the capital investment per worker is high.

## **Buildings**

Building costs may or may not be considered variable. Companies which have an established architectural style for their facilities will not be affected very much by local construction costs, particularly if the company does not use local contractors. More variation can be expected if a local contractor is used, because of differences in his labor and material costs.

If the company has no standard building requirement, and if the locations being considered are distributed over a relatively large area, then the different kinds of materials and construction methods can affect total building costs. Such costs then become variable and it is necessary to obtain construction estimates from several contractors, or to use other indices of construction costs.

An index that reports changes in construction costs in major U.S. cities is in the *Dow Building Cost Calculator and Valuation Guide*, published by McGraw-Hill Information Systems, Co., New York, N. Y.

## **Equipment**

Since the product line and production techniques are usually determined prior to the actual location decision, it is highly unlikely that equipment costs will vary because of the location. But, it is quite likely that maintenance and repair costs will vary. Several diverse factors may influence these costs, including lower skill levels of those who use the equipment, the ability of the firm's maintenance personnel, and the relative availability of factory representatives for service calls.

Careful consideration of the characteristics of the population, and of the personnel employed by the firm, should indicate whether significant differences, which might produce variable equipment operating costs, exist.

Consultations with equipment suppliers will indicate whether the proposed location affects either charges or service costs. If so, it will be necessary to get service cost estimates from equipment manufacturers. If more frequent service is required in certain locations, this cost must also be included.

## Other costs

Thus far the focus has been on costs that generally vary between communities, but there are other costs a company may also consider variable with the location. This requires detailed examination of the firm's cost structure to determine whether any of the other components vary between locations. It is particularly important that this be part of the analytical procedure for those factors that represent a large proportion of total cost. Even small fluctuations in the price of relatively large components can completely overshadow wide variations in incidental costs. Developing this kind of perspective on the firm's operating costs is probably the most important initial step in evaluating cost conditions.

The summary of all variable costs for a firm at different locations provides an indication of the differences in total cost among the communities. It is necessary to total the

variable costs for comparative purposes, since all inputs must be assembled at each location. With some costs, such as utilities and taxes, there is no choice but to accept the local situation. If the location decision does not affect product pricing, then local cost variations will indicate differences in gross profit for the firm at these locations.

## Case study

A recent study of eight potential locations estimated a difference of approximately \$270,000 between the high and low cost communities (See Table 1). As indicated, most of the cost variation resulted from differences in labor costs. In this instance, labor accounted for \$240,000 of the difference, and \$30,000 is explained by other factors. While this situation is not typical for all industrial firms, it is probably applicable to firms with a relatively low capital investment per worker.

From the analysis presented in the table, it becomes evident that community 1 is the most desirable, since the firm can expect to make more profit there than at any of the other locations. Costs would be approximately \$56,000 less than in community 7 and over \$100,000 less than in community 5.

**TABLE 1. Components of variable costs between communities for a case study plant location decision among eight communities<sup>1</sup>**

| Community | Labor     | Trans.<br>of raw<br>materials | Product<br>Distribution | Gas      | Water    | Sewage | Elec.    | Taxes    | Total<br>Cost | Cost<br>Ranking |
|-----------|-----------|-------------------------------|-------------------------|----------|----------|--------|----------|----------|---------------|-----------------|
| 1         | \$502,320 | \$25,500                      | \$166,725               | \$28,415 | \$ 9,012 | \$ 72  | \$14,040 | \$63,473 | \$ 809,557    | 1               |
| 2         | 746,304   | 19,500                        | 165,732                 | 30,471   | 7,104    | 15,000 | 14,040   | 71,920   | 1,070,071     | 7               |
| 3         | 746,304   | 42,000                        | 161,367                 | 36,319   | 8,090    | 8,703  | 14,040   | 73,153   | 1,079,976     | 8               |
| 4         | 702,062   | —                             | 165,594                 | 25,878   | 4,956    | 2,412  | 14,040   | 57,280   | 972,582       | 5               |
| 5         | 594,110   | 19,500                        | 158,642                 | 29,839   | 5,292    | 4,956  | 14,040   | 87,375   | 913,754       | 3               |
| 6         | 660,566   | 56,000                        | 158,229                 | 26,749   | 10,610   | 4,500  | 14,040   | 91,149   | 1,021,843     | 6               |
| 7         | 532,459   | 16,500                        | 169,580                 | 29,727   | 7,068    | 7,392  | 14,040   | 88,805   | 865,571       | 2               |
| 8         | 607,713   | 48,000                        | 158,859                 | 26,688   | 4,998    | 6,024  | 14,040   | 70,500   | 936,822       | 4               |

Source: Prewett, Raymond L., "The Analysis of an Industrial Location Decision," unpublished M.S. thesis, Department of Agricultural Economics, Purdue University, Lafayette, Indiana, 1968.

<sup>1</sup> All inputs were assumed to be of equal quality and productivity.



## Chapter 3

# Environmental variables

Historic Document







## Environmental variables

The previous section indicated that an analysis of variable costs can select one community as a preferred choice for the location of a new plant. Yet, industrial firms that face a location decision know the single criteria of maximum profits is not sufficient for making the choice. Additional measures must be used to determine the overall suitability of a community for a plant and its employees.

Most industrial managers have some preferences about the living and working conditions to be found in a community. Most firms transfer five to ten per cent of the employees for a new plant from other operations. Usually, these people are management and supervisory personnel of relatively high value to the company. Many are college-trained in engineering, accounting, labor-management relations and other business-related professions.

If environmental conditions existing in the community are not relatively close to the standards desired by these employees, the firm can expect serious labor problems. Therefore, the firm must evaluate each community's working and living conditions and compare them with cost information. If the minimum-cost community does not offer the quality and quantity of facilities and services desired by the firm's personnel, the firm runs the risk of losing such employees. This could reduce the efficiency of the firm's operations with a resultant lowering of profits.

The intangible, environmental factors are relatively difficult to rank in order of importance. It is even more difficult to determine meaningful differences among com-

munities. One can draw up a long list of criteria, all impossible to measure exactly, some of which would be valued differently by different firms. Some of the factors affect the firm more directly than do those of particular interest to individual employees. Yet, since all are of some interest to management, evaluation is necessary.

Among the factors commonly considered by firms are: general population characteristics; characteristics of the labor force and unions; community attitudes towards growth; the quality and quantity of municipal services; transportation; retail facilities; health and education facilities; banking institutions; communications services; motels and restaurants; recreational and cultural facilities and activities; housing availability; service and civic clubs; churches and libraries.

### General population characteristics

General population characteristics of interest to both management and supervisory personnel frequently include the population of the area, its rate of change over the past one or two decades, contemplated future changes and age composition.

Communities with static or declining populations generally lack the industrial mix needed to maintain a viable economic unit. Outmigration may indicate a need for substantial changes within the community to attract private investment. Where the population declines, tax burdens must be borne by fewer people, with a resulting high per capita cost for public services and a high probability of relatively poor services and/or high taxes in the future.

Age composition of the population is important. A relatively older population generally indicates a concentration of wealth in a few hands. Older people prefer to save rather than to invest, and are not likely to be interested in improvements that require additional taxes. Since they often occupy positions of influence in the community, it is difficult to construct or renovate public facilities to provide desired services.

Communities experiencing population growth often have less than adequate services and facilities, but are making needed investments as rapidly as possible. Although sub-standard at the moment, the public facilities and services are likely to be among the best available within a short time. In growing communities, the population is likely to be younger, more aggressive and eager, better trained and more adaptable to manufacturing processes and techniques, all of which result in high productivity.

Although many industrialists believe that a stable or declining population indicates limited economic opportunity, such communities can provide attractive plant locations.

If the characteristics reveal a suitable labor force, the firm may be able to operate on a lower wage scale than would be possible in a more competitive, growing community. The proposed wage scale, although somewhat lower than in surrounding areas, may be high enough to attract residents currently working outside the community. These people often would not commute if higher paying employment alternatives were available locally. In cases where the proposed wage rate exceeds the prevailing rates in the area, little difficulty in attracting sufficient labor should be experienced, unless large numbers of technically trained persons are required.

The firm's interpretation of a stable or declining population base may be either that the situation reflects a maladjustment of resources on which it can capitalize, or that it represents an adjustment that has already taken place and actually limits future opportunity.

Statistics on general population characteristics of each state, county and metropolitan area are available from the Bureau of the Census, U. S. Department of Commerce. In addition, special studies may be available from the state's board of health, the Department of Commerce or state universities.

## Labor force characteristics

Pertinent information about the labor force is primarily concerned with persons of working age, their present situation and what can be expected in the future. Of particular interest are those potential employees between 20 and 64 years of age, particularly the 20 to 39 age group. Firms want to know the size of these groups and whether they are growing, stable or declining.

A declining labor force in the 20 to 39 age category indicates the more productive and adaptive workers have migrated, and the firm can expect difficulty in hiring its desired labor force. Obviously a growing labor force is more likely to provide the kinds of workers sought by the firm.

Communities with limited opportunities for a particular class of workers may be just the place for a particular firm. For example, a community with relatively high employment in heavy industry may have many women who would work if opportunities were available. A firm utilizing a high proportion of women might find this a particularly desirable location.

Firms also want to know the occupational classification of the community's labor force, a particularly relevant item for those which seek a class of workers whose past history may be indicative of present performance. Specialized skills are more likely to be available where a large number are already trained and employed. A population primarily involved in agriculture may be judged as diligent, productive and adaptable to industry. An unusually high proportion of workers employed in wholesale-retail trades or services may indicate a population which could possibly be attracted into manufacturing where wages are generally higher. A high unemployment rate also makes it easier to attract labor.

The educational level of the labor force is important to employers. Education is generally believed to be directly related to productivity; and in a community with a higher education level, it is easier to train the labor force for a variety of jobs. If the industry requires a particularly high level of skills or training, basic data on those who have attended college may be needed.

The general income level of the community is of interest because it reveals what individuals have been earning and whether more than one member of the family



is employed. Families with low incomes are generally believed to have a greater desire to earn additional money than families with relatively high incomes.

Knowledge about income levels also provides information about relative wage scales. If two members of a family are working, this indicates a relatively lower wage scale than if only one member provides the family income. If the pattern of one worker per family predominates, it may indicate an opportunity to provide employment opportunities for other members.

Labor force information is usually obtained from either the decennial census conducted by the Bureau of the Census, U. S. Department of Commerce, or from manpower and special reports of the U. S. Department of Labor. Localized labor information is available from the Employment Security Division, the Department of Commerce and state universities. For detailed information of skills and availability of labor, special surveys may be needed.

## Unions

Today, most firms' employees are organized and industry expects to bargain with unions about wages and working conditions for its employees. When firms initiate production at a new location, the union in the home plant will probably attempt to organize in the new plant. If not, other unions in the community may try to unionize the plant. Even without outside organizing activity, labor is aware of the importance of acting collectively and may eventually form a company union.

The ability of management and labor to work out differences without serious interruptions in production is the prime concern of most firms. In some instances, firms believe that certain ethnic backgrounds have as much or more influence on labor-management relations as do specific unions.

The condition of labor-management relations is often revealed by man-days of work lost. This can be calculated on the basis of man-days lost per 100 people employed or per 100 days employed.

In addition, it is important to know the proportion of contracts in the community successfully negotiated without work interruptions. Labor-management relations deserve careful scrutiny when interpreting cause and effect. Strikes and breakdowns in negotiations can result from

differing attitudes on both sides. Specific information needed by firms includes the names of the unions and the number of members in each plant. The firm may have had favorable or unfavorable experiences with certain unions, and naturally will prefer to work with those unions with which satisfactory working arrangements have been established.

Information about organized labor ordinarily must be obtained from a variety of sources. State Employment Security offices frequently keep a record of work stoppages. State Departments of Commerce or Chambers of Commerce sometimes have records of union representation votes. More complete information may be available from the National Labor Relations Board. As a last resort, newspaper files and surveys can provide a description of past performances.

## Community attitudes

One of the most important and yet the most difficult factors to evaluate is the dominant community attitude toward growth. This attitude is fundamental to a firm's success, and industries realize they will encounter serious handicaps where they are not wanted. Expensive operating costs can result when a negative attitude prevents development of public facilities needed by industry. For the analyst, the real difficulty lies in assessing which characteristics indicate particular attitudes.

Reasonably accurate estimates of attitudes require surveys of the communities being considered. Data on industrial parks and development organizations are gathered infrequently. If available, information is most likely to be found in the State Department of Commerce, State Chambers of Commerce and electrical utility offices. Information on planning may be available through state planning agencies. Adequacy of utilities, streets and other public services is best judged by actual examination of the conditions.

The usual assumption is that tomorrow's community attitudes are simply an extension of today's opinions. If, for instance, public facilities such as streets, water and sewage facilities, recreation and housing are adequate and well maintained, the situation is likely to continue. Promises by community leaders that acceptable situations will exist after plant operations have begun are hard to

believe if such needs have not been provided for previously.

One indicator of favorable attitudes toward growth is the existence of local groups which are actually recruiting industry. This implies that someone recognizes the benefits of industrial development and seeks to make the community as attractive as possible. A local development corporation which owns or leases land and buildings also indicates a positive local attitude toward new business. The existence of an industrial park where sites have been plotted, and supporting services and facilities supplied indicates strong community support for new industry. Even if the firm's requirements exceed the capabilities of the industrial park, its presence is indicative of community attitudes.

Planning and zoning suggest that a community is preparing for the future by preventing misuse of sites which would reduce the attractiveness of the surrounding area for industrial, commercial, residential or educational uses. The larger the region included in the plans, the more desirable the situation, since small political subdivisions are not independent areas in today's world.

Another attitude indicator is the development of public facilities and services. It is particularly important to note the history of these items, especially whether they have tended to precede, to coincide with or to lag behind the needs of residents. Anticipation of growth usually cuts costs and increases the probability that the services or facilities will meet the needs of the people.

## **Municipal services**

A wide variety of services are expected in any community. Efficient community services are important intangible factors the firm considers before making a location decision.

Police protection is particularly important to firms with large capital investments, accumulated inventories and a large number of employees. Concern is frequently expressed about the availability of protection and the ability of police to react and to quickly control a situation. Thus, it is important to know the number of police per 1,000 residents, the number of police on duty at any given time, the dispersion of the police over the area, and the communications capabilities between the different law enforcement units such as the sheriff, city and state police.

Fire protection is another service desired by industries which must rely on municipal fire fighting departments in an emergency. Under these circumstances, it is important to know whether firemen are paid staff members or volunteers. A paid staff with men on duty 24 hours a day can react more quickly and often minimize damages. Paid firemen usually receive more training and, therefore, have the ability to handle a wider range of problems than a volunteer staff. Certain fire-fighting equipment can be crucial to firms where production processes require materials or buildings where fire would present unusually difficult control conditions. For instance, an aerial truck is a necessity for protection of a multiple story building.

Finally, most companies will want to know the fire protection rating placed on a community by the state rating bureau. This rating is a measure of quality and affects insurance costs.

Trash and garbage collection is a problem for both industry and homeowners. The firm wants to know the frequency of pickups and the basis for payment. Some communities provide separate collection services for homeowners and for commercial firms, and in some areas, firms must contract with a private scavenger for such services.

Postal service can affect the efficiency of orders and maintenance of good customer relations. If products are distributed by mail, it is even more important that the local post office be able to process additional volumes of mail within the firm's market area without delay.

## **Transportation**

Transportation is important to industries and residents of the community. While highways are most common and most frequently used, air, rail and water may also be considered by the firm as it looks for the best possible plant site.

Major transportation considerations as they affect firms were discussed earlier. There are, however, additional dimensions of transportation that affect living conditions, most involving access to a wide variety of goods and services. As a rule-of-thumb, one hour's traveling time establishes a trade area.

Highway access is determined by the kinds of roads leading into a community and connecting routes to other



communities. Accessibility is one of the most important considerations in highway travel today.

A community's relative position is enhanced if located near interstate highways, which add convenience and reduce time involved in travel. Feeder roads are more important when the community is not on an interstate route. The road system also influences the size of the area from which a company can hope to attract its labor force.

Air transportation is gaining in importance. The existence of local airports suitable for small aircraft and commercial traffic is particularly important to company executives. Such facilities may speed the product or technicians to a customer who is having problems. If the local airport is capable of handling only small aircraft, the connections with other airports offering commercial passenger service can be very important. If no airport is available to the community, a more important consideration may be the time required to travel to a major airport facility.

Composite data of the transportation services for a community can ordinarily be obtained from the state's highway commission, aeronautical agency or Public Service Commission. At times, it may be necessary to obtain detailed local information from a survey.

## **Educational opportunities**

Education and technical training opportunities are naturally of great interest to all residents, and such facilities will also be closely scrutinized by a firm. Although primarily of concern to individual employees, educational opportunities are of concern to the firm, because they affect both the qualifications of prospective employees and the satisfaction of management staff with the community.

An evaluation of educational opportunities for dependents requires careful analysis of school districts or corporations. A relatively large school district (or corporation) implies a well-coordinated and well planned total educational program. Numerous small districts cause the firm to question the comprehensiveness of the area's educational program.

Basic data for an analysis of local educational opportunities is normally available from a number of sources. Accrediting associations such as the North Central Association, state departments of education (or public instruction) review and publish information on the size of

the schools, the expenditures, pupil-teacher ratios and curriculum content.

The breadth of the curriculum—the number of subject units offered—is especially important to people who want their children prepared for college or vocational training. A narrow curriculum, such as a college preparatory program, may be structured at the expense of vocational training opportunities.

Another indicator of a community's educational strength is the number of high school graduates who seek additional training, as a contrast to those who do not complete high school. Probably the most desirable situation is a school district sufficiently large to support a broad program that serves the needs of the (entire) student body.

One must also include parochial schools in the analysis of the community's educational systems. Data may be relatively difficult to acquire from a single source, and surveys may be necessary to obtain desired data on the parochial school system.

Post-high school education is another important aspect of the local educational situation. The firm's employees will be concerned about furthering their own education, whether in vocational training programs, junior colleges or degree-granting institutions. Basic information about the breadth of curriculum and training available in the area's schools is necessary. For many companies, access to universities with an engineering and business curriculum is important, both as a source of potential employees and consultants and for maintaining the competence of existing staff members.

Firms do not expect to find advanced-degree institutions in every community, but they do hope to find them within an hour's drive.

Accurate, up-to-date information on vocational training facilities is ordinarily available from the state department of education or vocational training. Details about class schedules, courses offered and hours of operation must usually be obtained directly from the college or university.

The College Blue Book of Colleges and Universities may provide data on the schools' location, size and curriculum for institutions of higher education. Information about special training courses and class schedules must be obtained directly from the schools.

## **Retail trade**

The variety and quantity of retail goods and facilities available in the trade area directly influences employee satisfaction. If personnel are dissatisfied with the local shopping opportunities, the firm may have difficulty attracting employees and may experience relatively high turnover rates.

Retail trade opportunities are sometimes judged by the number and size of shopping centers. Their presence is commonly believed to indicate better services than are provided in a downtown area. In reality, the quality of the center depends on the number and kinds of stores. Small centers with only six or eight stores may not offer a better variety than the downtown stores.

Major department stores assure the shopper of the community's ability to meet the family needs. The new arrival in the community also likes to see familiar food chain stores.

Although local food stores may very well be as good or better than the national chain stores, the shopper needs more time to explore and evaluate the locally-owned shops. Meanwhile, the natural inclination is to look for and shop in the familiar chain stores.

Firms looking for new location sites may want even more detailed information about furniture and appliance stores, variety stores, lumber and building supply outlets. Shopping conditions in relatively small communities are enhanced if nearby cities can supplement the goods and services provided locally.

## **Motels and restaurants**

Although privately owned, motels and restaurants are also important elements of community appeal. Management evaluates the public accommodations for use by customers, clients and other visitors to the firm. Comfortable lodging and good food are important assets in creating an atmosphere for productive work and sound relationships. Adequate facilities are usually available in cities of 50,000 or more, but often are lacking in smaller communities. Satisfactory lodging can usually be provided by the hotel and motel chains.

Evaluating restaurants is more difficult. While chain restaurants do provide a level of dining quality that most people find satisfactory, they are not necessarily outstanding. Restaurants of unusual distinction are not a

necessary prerequisite for successful business operations, but definitely do contribute to the living environment.

Hotel and motel directories which specify their business locations are readily available. Some are rated by independent organizations such as the American Automobile Association, while other restaurants are listed in oil company travel guides. Local citizens often can provide the most complete information about motels and restaurants.

## **Health facilities**

Services and facilities to protect personal health are essential in every community and to every firm. For convenience, it is best to have the needed facilities and services available locally. It is vital when emergencies arise.

The characteristics of health facilities indicating local capabilities include the presence of either a public or private hospital, its number of beds, the specialized equipment and the number and specialties of the doctors and dentists. In small communities, access to medical facilities in nearby cities may be as important as existence of medical facilities in the local community. It is also important to know the travel time to larger communities where specialized medical services are available.

The environmental health conditions in a community do not escape the firm's attention. Public health services such as restaurant inspection, water pollution control, etc., are expected to be better managed if a full-time county health officer and a county sanitarian are charged with these responsibilities.

Specific data on the size and general conditions of hospitals, and the staffing and regulatory powers of local health departments are available from state boards of health. The location and specialty of doctors and dentists are recorded in professional directories of state and national associations. Telephone directories can be a source of simple listings.

## **Banking institutions**

In most communities, local banks can adequately handle the usual checking and savings account services required by individuals and the firm. However, there may be questions about the bank's ability to handle the large amounts of money normally involved for either capital



or operating purposes.

Local banking services can be particularly limiting where development of new industry will require additional housing. Local lending policies may restrict residential construction and increase the cost of living by making extensive commuting necessary.

The bank's financial position is usually published in an annual directory, or is available from a state's department of financial institutions. Financial statements are usually published in the local newspapers. Details on the lending policies must be obtained directly from the institution.

## **Communication**

Good communications facilities are necessary for most firms. Telephone and telegraph services are available in most communities, but differences can be observed. Poor service interrupts the personal lives of employees and makes business communication extremely difficult. Most larger communities have facilities to meet the needs of industry and residents, but occasionally small telephone companies still operate sub-standard facilities.

Another service desired by industry is TWX—telephone writer exchange. These lines relay business communications such as orders, sales and production schedules between large firms. Small telephone companies may not be able to provide this service, but arrangements can often be worked out with major telephone companies for installation.

Newspapers, radio and television stations are important to management as an aid to good internal and external public relations programs. These mass communications media are usually the best and most efficient way of spreading information and understanding about the firm. In addition, the mass media can be vital to communications in the job market when the firm seeks new employees.

## **Recreation**

The trends of recent years toward shorter work weeks and higher incomes have given recreational opportunities added importance. Now, a wide variety of recreational opportunities helps make the community a more interesting and enjoyable place to live and work. Recreation directly influences the family's mental attitudes, and

hence the individual's satisfaction with his job situation.

Elaborate recreational opportunities need not be immediately available, but should be within an hour's drive if they are to contribute directly to improvement of living conditions within a community.

Those activities and facilities needed in the local community include bowling alleys, golf courses, swimming pools, parks, country clubs, clubs for boys and girls, organized recreational programs and movie theatres. Camping sites, large parks and picnic grounds, reservoirs and lakes are also important. Because most of today's outdoor recreation includes all members of the family, a wide range of activities is required to satisfy all.

Unfortunately, there is no one central source for recreational opportunities data. The researcher can obtain some information from parks departments, the state department of natural resources and the local Chambers of Commerce. The compiler may supplement this information with local surveys.

## **Cultural activities**

Cultural activities are important to the life style of a particular community. For those who are actively involved, participation can be recreation, but generally such opportunities are offered for personal relaxation and enrichment.

Assessment of local cultural opportunities is based on amateur and professional theatrical groups, symphonies or bands, choral and chamber music groups, lecture series, museums and art galleries, public forums and discussion groups.

Such a wide variety of activities is expected only in larger communities or where colleges and universities are located. But, access to such opportunities is important. Since participation is usually limited to relatively short periods of time, opportunities should be within an hour's driving time, or not more than 50 miles away.

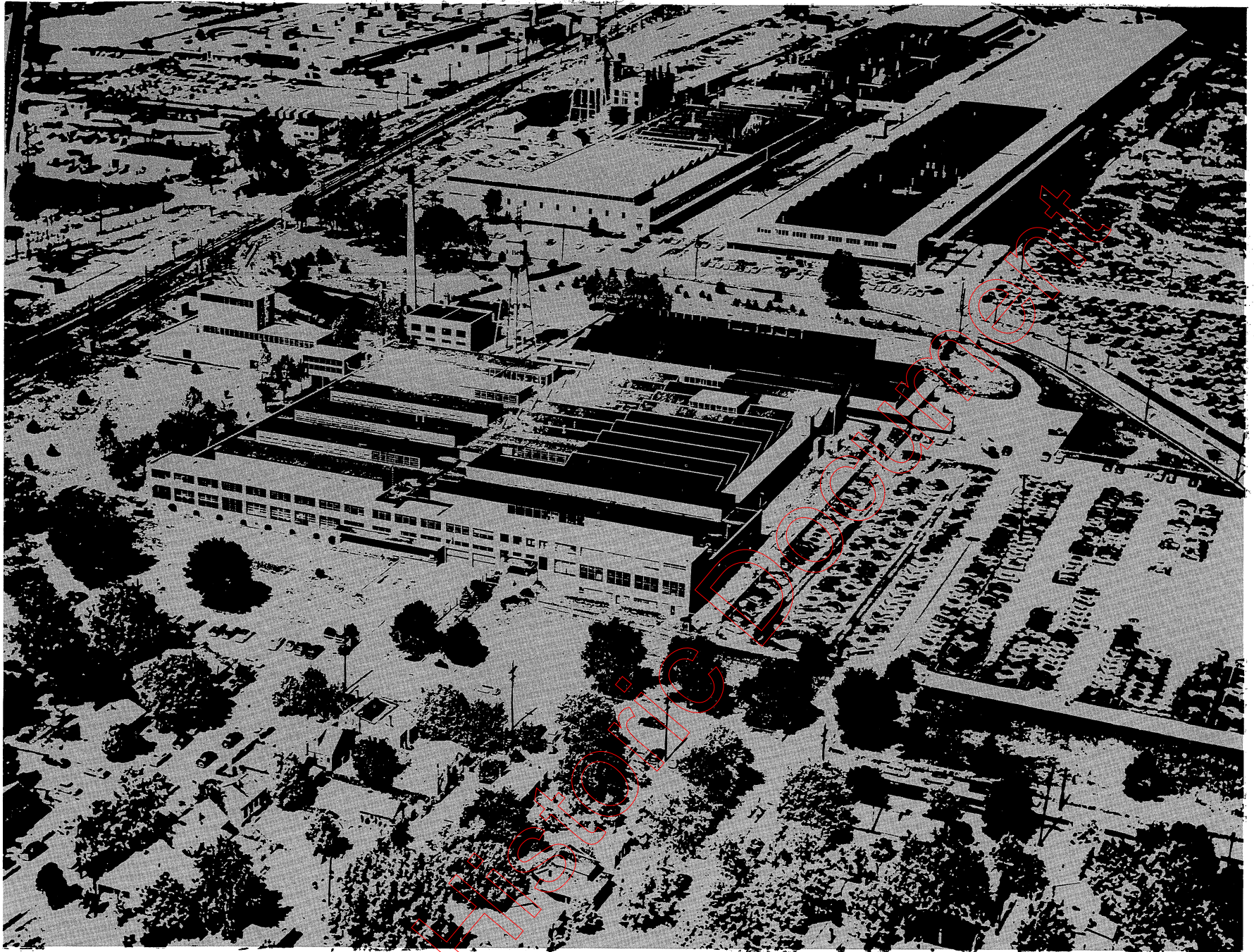
## **Other information**

Other information about the community will help the firm evaluate the opportunities for its people. This may include the kinds and number of local civic and service clubs, the number of volumes in the public library and the number and denominations of the churches. While such factors would not ordinarily eliminate a community from consideration, they may enhance its opportunities.

Chapter 4

**Determining  
industrial desirability**







## Determining industrial desirability

The process of gathering and assembling information about communities leads to the very difficult problem of ordering and analyzing *all* of the factors which may influence the firm's decision. It is not difficult to measure all the cost variables and then to estimate a total variable cost for each location; but there is no clear-cut measure for the intangible factors, which are not compatible with cost accounting. Therefore, the firm must develop an index which will permit a systematic evaluation and provide a ranking of the communities based upon the intangibles considered.

Unless all factors are of equal import, each factor must be weighted to indicate its relative importance in the location decision. The sum of the weights is not so important as their need to reflect the relative values of various factors. Some factors may even need to be subdivided and weights assigned to each subfactor.

Once the weighting procedure is established, firms may rank the communities in order of preference for each factor. The ranking can be consecutive from most to least desirable, or different numbers can be applied to reflect the amount of the difference between the communities.

For example, there may be an obvious first choice for a particular factor, while the second most desirable situation would be considered only half as good. If ranking on a ten-point scale, with 10 awarded to the best, the second community would receive a score of five, not nine.

In other circumstances, it may be desirable to develop ranges and values for the criteria which have equal degrees of acceptability. Therefore, if a community fell within a certain range of the factor, it would receive a value of one, and in another range, a different value. The relative values attached to each of these should be indicative of the differences between them. The range of values one would find in these situations may be difficult to predict before the data are assembled. Therefore, it may be necessary to wait until the information is assembled before finalizing decisions on what values are to be included in one range of acceptability and what values are to be assigned to others.

### A weighted ranking technique

A simple, weighted ranking system for evaluating community assets essentially involves determining categories of interest and assigning a relative weight to each category. Using this system, the characteristics of each community are ranked according to their desirability in relation to other communities.

A recent case study<sup>1</sup> found that one firm assigned weights to major categories, and then established weights for such categories of information.

The firm weighted labor three times as heavily as the second most important factor—municipal services—and

<sup>1</sup> *The Analysis of an Industrial Location Decision*, Unpublished M.S. Thesis, R. L. Prewett, Department of Agricultural Economics, Purdue University, Lafayette, Indiana, June, 1968.



gave equal weight to transportation, education, and business environment. The living environment factor received the least weight. (See Table 3).

Labor, which received 42 per cent of the total weight, was divided into sub-categories; 1) size of labor force, eight per cent; 2) education of the labor force, four per cent; 3) availability of workers, 13 per cent; and 4) labor climate, 17 per cent. (See Table 4).

**TABLE 3. Weights Assigned to Factors Considered in One Firm's Location Decision**

| Factor               | Final Weighting<br>(per cent) |
|----------------------|-------------------------------|
| Labor                | 42                            |
| Transportation       | 12                            |
| Municipal Services   | 14                            |
| Education            | 12                            |
| Business Environment | 12                            |
| Living Environment   | 8                             |
|                      | <u>100</u>                    |

The firm further detailed the description of each sub-category. The size of the labor force was described by three items, each consisting of "indicators." The item, "Number of 25-49 year-olds present in the county," was scored by evaluating the number present at that time (0.9 per cent), those expected three years in the future (0.9 per cent), eight years in the future (0.7 per cent), and 13 years in the future (0.5 per cent).

The first item, "Number of 25-49 year-olds in the county," was allotted three of eight points for "size of labor force" because the company was operating in the short run and more concerned with that age group, as evidenced in the weighting of the indicators. Because the firm attached less importance to the 1975 and 1980 estimates, they weighted the indicators less than the 1967 and 1970 projections.

The second item, "Number in skill categories," included four indicators—professional, clerical, skilled and unskilled — of labor force characteristics important to that firm.

The third item, "Number in labor force over 24 years of age," was determined by two indicators, "Males" and "Females."

**TABLE 4. Illustration of Weighting Procedure Employed by Case Study Firm**

| Classification of Elements                      |  | Weighting |   |     |
|---|--|-----------|---|-----|
| I. Labor (category) 42                          |  |           |   |     |
| A. Size of labor force (sub-category) 8         |  |           |   |     |
| 1. Number of 25-49 year olds in County 3        |  |           |   |     |
|   |  | a         | b | c   |
| a. 1967 (indicator)                             |  | .9        | 4 | 3.6 |
| b. 1970   |  | .9        | 4 | 3.6 |
| c. 1975   |  | .7        | 4 | 2.8 |
| d. 1980   |  | .5        | 4 | 2.0 |
| 2. Number in skill categories 3                 |  |           |   |     |
| a. professional                                 |  | .5        | 4 | 2.0 |
| b. clerical                                     |  | .8        | 4 | 3.2 |
| c. skilled                                      |  | 1.2       | 5 | 6.0 |
| d. unskilled                                    |  | .5        | 8 | 4.0 |
| 3. Number in labor force over 24 years of age 2 |  |           |   |     |
| a. male   |  | 1.0       | 5 | 5.0 |
| b. female                                       |  | 1.0       | 4 | 4.0 |

Communities were then ranked in order of desirability for each factor.

In the illustration, (Table 4) the community ranked fourth in size of labor force each of the four years examined. Multiplying this ranking as shown in column b times the value of each indicator in column a gives a total value for that particular indicator in column c. The community had different ranks in different indicators, which summed to a value of 36.2 for the sub-category. The same computations were made for each of the communities being considered as a possible new plant site.

While the statistical analysis does not indicate the exact desirability of the community, it is meaningful because it ranks the communities according to the firm's preferences.

These totals, although not an exact measure of the differences between communities, do provide a more systematic approach to recognizing these differences. A more accurate estimate of relative differences could be

obtained with the use of a continuous scale, if one were able to accurately specify the exact magnitude of differences for each community characteristic.

## Profits vs. Environment

Comparison of variable cost estimates with the community's environmental attributes permits an analysis of the desirability of the different locations under consideration.

Each community now has a ranking based on its total score. However, the results represent a dilemma for the company involved, as illustrated by Table 5.

In Table 5, Community H is shown as the most desirable community in terms of non-economic (intangible) factors while Community C was the second choice. But, if the firm's goal is to minimize costs, Community A is the obvious choice. However, in terms of intangible factors, it ranks seventh. Community G ranked second in terms of costs, but sixth in intangible factors. Communities B and C were highest in costs, but third and second in terms of intangible factors. Thus, those communities that are preferable in terms of anticipated variable costs possess relatively less desirable non-economic conditions.

At this point, company executives must decide whether they will use only the cost analysis and disregard the intangible analysis, or whether they are willing to stand the increased costs of locating for more desirable living and working conditions. If the latter is sufficiently important, some compromise is in order.

From the analysis of costs and intangibles in Table 5, Community H is indicated as the best location for the company, since no other community offers a better combined rating.

This dilemma of the industrial location decision is understandable. In general, the quality of services and opportunities within a community are directly related to the community's income levels. Most low income communities have relatively limited services and facilities, and higher income communities are better able to provide desired services.

**TABLE 5. Comparison of Cost and Intangible Ranking**

| Rank No. | Variable Cost<br>Analysis | Community Intang-<br>ible Analysis |
|----------|---------------------------|------------------------------------|
| 1        | A                         | H                                  |
| 2        | G                         | C                                  |
| 3        | E                         | B                                  |
| 4        | H                         | F                                  |
| 5        | D                         | D                                  |
| 6        | F                         | G                                  |
| 7        | B                         | A                                  |
| 8        | C                         | E                                  |

For instance, educational opportunity in low income communities may be somewhat limited by low expenditures per pupil and a narrow curriculum. Medical facilities and doctors may be scarce or even unavailable. Recreational facilities may be privately owned and consist of little more than a tavern or billards parlor.

Other public facilities may be woefully inadequate. Water may be available only from individually-owned wells, or distributed through a system with a capacity too limited to serve an industry of any size. There may be little or no sewage treatment capabilities. Trash and garbage disposal may be left up to the homeowner, who must find an open dump because municipal financing is unavailable. Police and fire protection may be dependent upon outdated equipment and poorly trained personnel. Shopping centers, if any at all, and other retail outlets may not provide satisfactory selection of merchandise.

On the other hand, the higher income community, although it promises to cost more, may be preferable on the basis of its capabilities to offer desirable conditions. If there is a clear-cut difference between communities that will adversely affect the firm's employees, management may agree to accept higher operating costs to secure better environmental factors.

Industries that are planning expansion or relocation are often confronted with the problem of making a sound choice between the desired economic situations and the most desirable living conditions. The necessary compromise results in the selection of a plant location where the community can provide the desirable living and working conditions at a cost deemed reasonable by the firm.



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